

REMARKS

Claims 1, 24, 34, 47, and 79 are amended and claims 84-94 are added by this amendment. Applicant notes with appreciation that claims 52-73 were allowed and claims 5, 7-9, 12, 13, 22, 24-26, 32, 35, 37, 38, and 49-51 were indicated as being allowable if rewritten in independent form incorporating the limitations of their base claim and any intervening claims. Claims 1-94 will be pending upon entry of this amendment.

I. General Remarks

The present invention is especially (but not exclusively) directed to food service equipment that uses infrared (IR) heaters to maintain pre-cooked food at proper temperatures before serving. This type of equipment is commonly known in the food service industry as holding oven, holding unit, and food warmer. Such equipment is often used in, for example, the fast food service industry to maintain pre-cooked food at a holding temperature for a corresponding holding time. The holding time of pre-cooked food typically corresponds with the time between completion of the cooking process of the food and service of the cooked food to a customer.

It is recognized that the highest quality food product served by a restaurant is a freshly cooked food product that is made-to-order by preparing the food product in a conventional cooking appliance (e.g., grill, fryer, oven, etc.) and serving the food directly to a consumer without subjecting the food product to any holding time. However, providing made-to-order food products results in extended customer waiting times while a food order is prepared. The goal of typical fast food restaurants is to provide food products of the highest possible quality and freshness in the shortest amount of time. In order to decrease service time, food holding equipment is needed to hold a quantity of pre-cooked food for the duration of time between the end of the cooking process of the food product and service to the customer so that the service time to the customer is not delayed by the cooking process for a food order.

The quality of the food held in food holding equipment is affected in large part by the temperature at which the food is held and the amount of air flow to the food. When food loses moisture due to evaporation, flavor is lost and the texture and taste of the product also degrades. For example, chicken meat fibers of a breaded chicken food product held in conventional food holding equipment will dry out and become tough, while the breading will become dry and greasy. Also, french fries will develop a dry, rubbery texture as moisture is lost and the outer skin loses its crispness.

Conventional food holding equipment utilizing IR heat sources has certain disadvantages. For example, short holding times (e.g., twenty minutes or less) and rapid food product quality degradation often limit the effectiveness of this technology for food holding applications. Additionally, different food products (e.g., chicken, fish, shrimp, etc.) require different amounts of IR energy to be held in optimum condition. Short food holding times result in waste because food products must be discarded once their quality has degraded and replaced with a freshly cooked product.

The present invention represents an improvement over prior art food holding equipment. The food holding oven of the present invention maintains the quality of the freshly cooked food product held therein by decreasing the quality degradation of the food product during the food holding time, resulting in a higher quality food product that is served to the consumer. Also, the present invention increases operational efficiencies by extending food holding times, eliminating waste, and decreasing the amount of power utilized in the food holding equipment. In one typical example, the present invention is capable of holding deep-fried fish for approximately 40 minutes while maintaining the texture and flavor of the fish. In contrast, prior art food holding equipment is only capable of holding the same deep-fried fish product for a time period of 15 minutes during which the fish was subjected to considerable quality degradation, resulting in a lower quality product available for service to the consumer.

II. Claims 1-33 and 74-78

Claim 1, as amended, is directed to a food holding oven for holding pre-cooked food having been previously cooked in a cooking appliance in combination with a plurality of trays for holding the pre-cooked food. Each tray has a bottom wall and side and end walls extending up from the bottom wall to an upper rim defining an open top of the tray. The food holding oven has a cabinet, partitions dividing the interior of the cabinet into a plurality of separate, thermally isolated holding compartment each adapted for removably receiving a tray of the plurality of trays. The oven has a plurality of heat sources in the compartments above the trays adapted for activation to emit radiant heat to the food in the trays to warm the food and a control mechanism for controlling operation of the heat sources independent of one another whereby the food holding temperature in each compartment may be independently controlled.

More specifically, claim 1 specifies the combination of a plurality of trays for holding pre-cooked food having been previously cooked in a cooking appliance, each tray having a bottom wall and side and end walls extending up from the bottom wall to an upper rim defining an open top of the tray, and a food holding oven for holding pre-cooked food at a selected food holding temperature. The food holding oven comprises:

- a cabinet having an interior;

- partitions in the cabinet dividing said interior into a plurality of separate, thermally isolated holding compartments each adapted for removably receiving a tray of said plurality of trays;

- a plurality of heat sources in said compartments above said trays adapted for activation to emit radiant heat to the food in the trays to warm the food; and

- a control mechanism for controlling operation of the heat sources independent of one another whereby the food holding temperature in each compartment may be independently controlled.

Claim 1 is submitted as patentable over the prior art of record, including in particular U.S. Patent No. 6,710,308 (Sauter et al.), in that none of the references show or suggest the combination of a food holding oven for holding pre-cooked food at a food holding temperature and a plurality of trays for holding the pre-cooked food, the oven having a cabinet, partitions in the cabinet dividing the cabinet into a plurality of thermally isolated holding compartments each adapted for removably receiving a tray, a plurality of heat sources in the compartments above the trays, and a control mechanism for controlling operation of the heat sources independent of one another whereby the food holding temperature in each compartment may be independently controlled.

Sauter et al. disclose a wall oven 102 having an upper cooking cavity 104 and a lower cooking cavity 105. The oven 102 is programmable to perform distinct cooking operations in the upper and lower cooking cavities. The oven 102 has a controller 200 that receives cooking operation inputs for the upper cooking cavity 8 and the lower cooking cavity 9. Upon initiation of a control input, the controller 200 will delay the shorter cooking operation so that the two cooking operations finish at the same time. The oven 102 allows separate components of a meal to be cooked in separate cooking cavities so that each component of the quality of a meal is improved by having the cooking operation of two components of the meal finish at same time.

Sauter et al., and the other references of record, do not show or suggest the combination of a food holding oven for holding pre-cooked food (i.e., food having been previously cooked in a cooking appliance) at a food holding temperature and a plurality of trays for holding the pre-cooked food. Rather, Sauter et al. disclose an oven for eliminating the food holding time of food products of a meal by delaying the cooking operation of one of the food products so that the cooking operations of both of the food products are completed simultaneously. The simultaneous completion of the cooking process in both cavities of the oven allows the food products being cooked therein to be

served at the same time, thus eliminating the need for any food holding time of the food products.

In contrast, the present invention is intended to improve the food preparation process by holding pre-cooked food in trays after the cooking process has been completed. The food held in the food holding oven of the present invention is held at a food-holding temperature that may be independently controlled for each compartment of the oven. Sauter et al. completely lack a showing or suggestion of such a food holding oven.

Furthermore, Sauter et al. do not disclose a plurality of separate, thermally isolated holding compartments each adapted for removably receiving a tray for holding pre-cooked food the tray having a bottom wall and side and end walls extending up from the bottom wall to an upper rim defining an open top of the tray. The Examiner states in the Office action (second paragraph, page 2) that Sauter et al. disclose cooking vessels placed in each of the cooking compartments, the cooking vessels being inherently "trays" as recited in claim 1. Applicant cannot find any such disclosure in Sauter et al. of "cooking vessels" or "trays" and submits that Sauter et al. completely lack any showing or suggestion of the placement of trays having the features recited in claim 1 in the cooking compartments.

Applicant notes that in relying upon inherency, the Office must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent feature "necessarily flows from the teachings of the applied prior art." MPEP 2112 citing *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient for inherency. See MPEP 2112, citing *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993).

Accordingly, applicant submits that the rejection noted in the Office action lacks a sufficient basis of fact or reasoning to support the position that Sauter et al. inherently disclose the use of trays having all the features of the present invention.

Accordingly, claim 1 is submitted to be unanticipated by and patentable over the references of record. Claims 2-33 and 74-78 depending directly or indirectly from claim 1 are submitted as unanticipated by and patentable for the same reasons as claim 1.

Claim 31 depends directly from claim 1 and recites vertically spaced shoulders in each compartment at opposite sides of the compartment for supporting a tray at different elevations in the compartment. Sauter et al. completely lack a showing or suggestion of a thermally isolated compartments having the features recited in claim 31.

Accordingly, claim 31 is submitted as unanticipated by and patentable over Sauter et al. for this additional reason.

Claim 74 depends directly from claim 1 and recites that the control mechanism is operable to control operation of each heat source to deliver heat to the food to warm the food to the holding temperature and then to vary the amount of heat delivered to the food to hold the food at the selected food holding temperature. Sauter et al. do not show or suggest a control mechanism that delivers heat to the food to warm the food to the holding temperature and then varies the amount of heat delivered to the food to hold the food at the selected food holding temperature.

Accordingly, claim 74 is submitted as unanticipated by and patentable over Sauter et al. for this additional reason.

Claim 75 depends indirectly from claim 1 and recites that the control mechanism comprises an operator input device for selecting the type of food to be placed in the compartment, and that the control mechanism is programmed for operating the heat source according to a predetermined protocol depending on the type of food. Sauter et al. completely lack a showing or suggestion of a control mechanism having an operator input device for selecting the type of food to be placed in the compartment, and a control mechanism programmed for operating a heat source according to a predetermined protocol depending on the type of food. At most, Sauter et al. disclose a control mechanism having an operator input device for accepting a temperature set

point for each cavity of a cooking oven, but this disclosure does not teach a control mechanism having an operator input device for selecting the type of food, or a control mechanism programmed to operate the heat source according to a predetermined protocol based on the type of food product. (see col. 4, lines 30-47).

Accordingly, claim 75 is submitted as unanticipated by and patentable over Sauter et al. for this additional reason.

Claim 76 depends directly from claim 1 and recites that the control mechanism is programmed to operate the heat source according to a predetermined protocol to vary the heat delivered to the food depending on the type of food placed in the compartment. Sauter et al. completely lack a showing or suggestion of a control mechanism having a predetermined protocol that varies the heat delivered to food based on the type of food product. At most, Sauter et al. disclose that the temperature set point of each cavity of a cooking oven can vary, but this disclosure does not teach a predetermined protocol to vary the heat delivered to the food based on the type of food product. (see col. 4, lines 30-47).

Accordingly, claim 76 is submitted as unanticipated by and patentable over Sauter et al. for this additional reason.

Claim 77 depends directly from claim 1 and recites that the control mechanism comprises an operator input device for selecting the type of food product placed in a respective compartment, and that the control mechanism is programmed to operate a respective heat source to heat the food in a respective compartment to a pre-programmed selected holding temperature to hold the food at the pre-programmed selected holding temperature. Sauter et al. completely lack a showing or suggestion of a control mechanism having an operator input device for selecting the type of food to be placed in the compartment, and a control mechanism programmed to operate a respective heat source to heat the food in a respective compartment to a pre-programmed holding temperature to hold the food at the selected temperature. At most, Sauter et al. disclose a control mechanism having an operator input device for accepting a temperature set point for

each cavity of a cooking oven, but this disclosure does not teach a control mechanism having an operator input device for selecting the type of food, or a control mechanism programmed to operate the heat source to heat the food to a pre-programmed selected holding temperature. (see col. 4, lines 30-47).

Accordingly, claim 77 is submitted as unanticipated by and patentable over Sauter et al. for this additional reason.

Claim 78 depends from claim 77 and recites that the control mechanism is responsive to the operator input device to operate the heat source to hold the food at the pre-programmed selected holding temperature for a pre-programmed holding duration. Sauter et al. do not show or suggest a control mechanism that operates the heat source to hold food at a selected holding temperature for a pre-programmed holding duration.

Accordingly, claim 78 is submitted as unanticipated by and patentable over Sauter et al. for this additional reason.

III. Claims 34-46, 79 and 80

Claim 34 is directed to a method of controlling the operation of a food holding oven comprising a cabinet having a plurality of isolated holding compartments in the cabinet for removably receiving a tray containing pre-cooked food, and a heat source above a respective tray to heat the food in the tray. The operation of the oven is controlled by activating and deactivating each heat source during successive duty cycles to maintain the food in a respective compartment at a selected food holding temperature for a duration of heated holding time.

More specifically, claim 34 specifies a method of controlling the operation of a food holding oven. The oven comprises a cabinet, a plurality of separate, thermally isolated holding compartments in the cabinet, each compartment being adapted for removably receiving a tray for containing pre-cooked food having been previously cooked in a cooking appliance, and a heat source above a respective tray for emitting radiant heat to the food in the tray to warm the food. The method of claim 34 comprises activating and deactivating each heat source during

successive duty cycles thereby to maintain the food in a respective compartment at a selected holding temperature for a duration of heated holding time, each duty cycle comprising a heating interval followed by a non-heating interval.

Claim 34 is submitted as patentable over the prior art of record, including in particular U.S. Patent No. 6,710,308 (Sauter et al.), in that none of the references show or suggest a method of controlling the operation of a food holding oven having a cabinet with a plurality of isolated holding compartments in the cabinet for removably receiving a tray containing pre-cooked food, and a heat source above a respective tray to heat the food in the tray. Nor does this patent teach the method of operation of applicant's oven comprising activating and deactivating each heat source during successive duty cycles to maintain the food in a respective compartment at a selected food holding temperature for a duration of heated holding time.

As noted above, Sauter et al. disclose a wall oven 102 having an upper cooking cavity 104 and a lower cooking cavity 105. The oven 102 is not a food holding oven but rather is a conventional food cooking oven that is programmable to perform distinct cooking operations in the upper and lower cooking cavities. Each distinct cooking operation cooks food held in a respective cavity and does not heat pre-cooked food to maintain the food in a respective cavity at a selected food holding temperature. Sauter et al. teach that the cooking operations of each cavity may be completed simultaneously so as to eliminate the need for holding the cooked food after completion of the cooking process.

Sauter et al. do not teach a method of controlling the operation of a food holding oven having a cabinet with a plurality of isolated holding compartments in the cabinet for removably receiving a tray containing pre-cooked food, and a heat source above a respective tray to heat the food in the tray. Rather, Sauter et al. merely suggest a conventional cooking operation (e.g, baking, broiling, etc.) which applies a thermal process to uncooked food to achieve a finished cooked food

product suitable for a meal. Nothing in the disclosure of Sauter et al. shows or suggests a method of controlling the operation of a food holding oven to maintain pre-cooked food in a respective compartment of the oven at a selected holding temperature.

Accordingly, claim 34 is submitted to be unanticipated by and patentable over the references of record. Claims 35-46, 79 and 80 depending directly or indirectly from claim 34 are submitted as unanticipated by and patentable for the same reasons as claim 34.

Claim 46 depends from claim 34 and further comprises varying the vertical position of at least one tray in a respective compartment. As set forth above for claim 1, Sauter et al. completely lack any showing or suggestion of a tray for containing pre-cooked food in a respective compartment of the oven. Further, Sauter et al. lack a showing or suggestion of varying the vertical position of the tray in a respective compartment.

Accordingly, claim 46 is unanticipated by and patentable over Sauter et al. for this additional reason.

Claim 80 depends indirectly from claim 34 and recites that the method further comprises programming the oven to heat the food in each compartment to a selected holding temperature which varies depending on the type of food placed in the compartment. Sauter et al. do not show or suggest programming the oven to vary the temperature of each compartment depending on the type of food placed in the compartment. Rather, Sauter et al. disclose programming separate and distinct cooking temperatures for the respective cooking operations in each cavity, but this disclosure does not teach that the cooking temperatures vary by the type of food being cooked.

Accordingly, claim 80 is unanticipated by and patentable over Sauter et al. for this additional reason.

IV. Claims 47-51, 81, and 82

Claim 47 is directed to a method of controlling the operation of a food holding oven comprising a cabinet having a

plurality of isolated holding compartments in the cabinet for removably receiving a tray containing pre-cooked food, and heat sources above a respective tray to heat the food in the tray. The operation of the oven is controlled by setting a selected holding temperature for each compartment, setting a duration of holding time for each compartment, and activating each heat source during a respective duration of the heated holding time to maintain food in a respective compartment at the selected holding temperature.

More specifically, claim 47 specifies a method of controlling the operation of a food holding oven. The oven comprises a cabinet, a plurality of separate, thermally isolated holding compartments in the cabinet, each compartment being adapted for removably receiving a tray for containing pre-cooked food having been previously cooked in a cooking appliance, and heat sources above respective trays adapted for activation to emit radiant heat to the food in the trays to warm the food. The method of claim 47 comprises:

- setting a selected holding temperature for each compartment;

- setting a duration of holding time for each compartment, said duration of holding time comprising a duration of heated holding time; and

- activating each heat source during a respective duration of heated holding time thereby to maintain the food in a respective compartment at said selected holding temperature.

Claim 47 is submitted as patentable over the prior art of record, including in particular U.S. Patent No. 6,710,308 (Sauter et al.), in that none of the references show or suggest a method of controlling the operation of a food holding oven having a cabinet with a plurality of isolated holding compartments in the cabinet for removably receiving a tray containing pre-cooked food, and a heat source above a respective tray to heat the food in the tray. Sauter et al. also fail to teach a method of oven

operation comprising setting a selected holding temperature, setting a duration of holding time for each compartment, the duration of holding time comprising a duration of heated holding time, and activating each heat source during a respective duration of heated holding time to maintain the food in a respective compartment at the selected holding temperature.

As noted above, Sauter et al. disclose a wall oven 102 having an upper cooking cavity 104 and a lower cooking cavity 105. The oven 102 is not a food holding oven, but rather, is a conventional food cooking oven that is programmable to perform distinct cooking operations in the upper and lower cooking cavities. Each distinct cooking operation cooks food held in a respective cavity and does not heat pre-cooked food to maintain the food in a respective cavity at a selected food holding temperature. Sauter et al. teach that the cooking operations of each cavity may be completed simultaneously so as to eliminate the need for holding the cooked food after completion of the cooking process.

Sauter et al. thus fail to show or suggest a method of controlling the operation of a food holding oven having a cabinet with a plurality of isolated holding compartments in the cabinet for removably receiving a tray containing pre-cooked food, and a heat source above a respective tray to heat the food in the tray. Rather, Sauter et al. merely suggest a conventional cooking operation (e.g, baking, broiling, etc.) which applies a thermal process to uncooked food to achieve a finished cooked food product suitable for a meal. Nothing in the disclosure of Sauter et al. shows or suggests a method of controlling the operation of a food holding oven to maintain pre-cooked food in a respective compartment of the oven at a selected holding temperature.

Accordingly, claim 47 is submitted to be unanticipated by and patentable over the references of record. Claims 48-51, 81, and 82 depend directly or indirectly from claim 47 are submitted as unanticipated by and patentable for the same reasons as claim 47.

Claim 82 depends indirectly from claim 47 and recites that the method further comprises programming the oven to heat the food in each compartment to a selected holding temperature which varies depending on the type of food placed in the compartment. Sauter et al. do not show or suggest programming the oven to vary the temperature of each compartment depending on the type of food placed in the compartment. Rather, Sauter et al. disclose programming separate and distinct cooking temperatures for the respective cooking operations in each cavity, but this disclosure does not teach that the cooking temperatures vary by the type of food being cooked.

Accordingly, claim 82 is unanticipated by and patentable over Sauter et al. for this additional reason.

V. New Claims 84-94

A. Claims 84-86

New claim 84 corresponds to claim 24 written in independent form. Claim 24 was rejected solely on the basis of depending from a rejected base claim. Therefore, new claim 84 is believed to be in form for allowance.

New claim 85 corresponds to claim 35 written in independent form. Claim 35 was rejected solely on the basis of depending from a rejected base claim. Therefore, new claim 85 is believed to be in form for allowance.

New claim 86 corresponds to claim 49 written in independent form. Claim 49 was rejected solely on the basis of depending from a rejected base claim. Therefore, new claim 89 is believed to be in form for allowance.

B. Claims 87-94

New claim 87 is submitted as patentable over the prior art of record, including Sauter et al., in that none of the references show or suggest a food-holding oven having the features recited in claim 87, namely:

i) a cabinet having a front, back and an interior space;

ii) a plurality of separate, thermally isolated holding compartments in the interior space of the cabinet for receiving trays for holding the pre-cooked food;

iii) each compartment having an open front end at the front of the cabinet for placement of a respective tray in the compartment and removal of said tray from the compartment;

iv) the cabinet having a first row of compartments and a second row of compartments, the first row being arranged above the second row;

v) a plurality of heat sources in said compartments above said trays adapted for activation to emit radiant heat to the food in the trays to warm the food; and

vi) a control mechanism for controlling operation of the heat sources independent of one another whereby the food holding temperature in each compartment may be independently controlled.

It should be noted that the Sauter et al. reference fails to teach an oven having the combination of features recited in claim 87, including first and second rows of compartments having open ends at the front of a cabinet. Therefore, claim 87 is submitted as allowable over the prior art.

New claims 88-94 depend directly or indirectly from claim 87 and are patentable over the prior art of record for at least the same reasons as claim 87. Additional reasons are given below.

Claim 88 recites that each compartment has an open back end at the rear of the cabinet for placement of a respective tray in the compartment and removal of said tray from the compartment. The back of the oven in the Sauter et al. patent is closed.

Claim 89 recites that the front ends of the compartments are doorless and remain open during a heating operation. This is in contrast to Sauter et al. where the oven has front doors which remain closed during a cooking operation.

Claim 90 recites that the control mechanism is operable to control operation of each heat source to deliver heat to the food in a respective tray to warm the food to a selected holding temperature, and then to vary the amount of heat delivered to the food to hold the food at the selected holding temperature.

Accordingly, claim 90 is submitted as patentable over the prior art of record for this additional reason.

Claim 91 recites that the control mechanism is programmed to operate the heat source according to a predetermined protocol to vary the heat delivered to the heat source depending on the type of food placed in the compartment. Accordingly, claim 91 is submitted as patentable over the prior art of record for this additional reason.

Claim 92 recites that the control mechanism comprises an operator input device for selecting a type of food placed in a respective compartment and that the control mechanism is programmed to operate a respective heat source to heat the food in a respective compartment to a pre-programmed selected holding temperature and to hold the food at the pre-programmed selected holding temperature. Accordingly, claim 92 is submitted as patentable over the prior art of record for this additional reason.

Claim 93 recites that the cabinet has top, bottom and opposite sides, the cabinet being sized such that the distance between the opposite sides is greater than the distance between the top and bottom of the cabinet. Accordingly, claim 93 is submitted as patentable over the prior art of record for this additional reason.

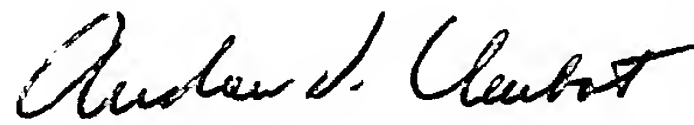
Claim 94 recites that the control mechanism comprises an operator input device below the top of the cabinet and adjacent a side of the cabinet. Accordingly, claim 94 is submitted as patentable over the prior art of record for this additional reason.

VI. CONCLUSION

In view of the foregoing, reconsideration and allowance of claims 1-94 is respectfully requested.

A check and fee transmittal are enclosed for the additional claims fee. The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment to Deposit Account No. 19-1345 in the name of Senniger Powers.

Respectfully submitted,



Andrew N. Claerbout, Reg. No. 50,202
SENNIGER POWERS
One Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
(314) 231-5400

ANC/MEG/jmd

Express Mail Label No. EV 504796858 US